

REMARKS/ARGUMENTS

Claims 1-3, 5-14, 16-30, and 32-35 are pending. Claim 12 is amended herein. No new matter is added as a result of the Claim amendments. Claim 12 is currently being amended to account for a data processing error occurring in the Amendment and Response to the Office Action mailed October 19, 2005. The following original limitation was inadvertently left out of the Amendment and Response, without being cancelled:

a user interface system adapted for facilitating user interaction by integrating operation of said position determination system, said lightbar device, said data input device, and said display device

Applicant reinserted this limitation into Claim 12, and then amended Claim 12 as shown above to reflect its presence.

Rejection under 35 U.S.C. § 103(a)Claims 1-3, 5-14, and 16-24

Claims 1-3, 5-14, and 16-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gvili, (U.S. Patent No. 5,717,593), hereinafter referred to as “Gvili,” in view of Fowler et al., (U.S. Patent No.6,104,979), hereinafter referred to “Fowler,” and yet in further view of McClure et al., (U.S. Patent No.6,539,303), hereinafter referred to as “McClure,” and still yet in further view of Murphy (U.S. Patent No. 6,711,475), hereinafter referred to as “Murphy.” Applicants have reviewed the cited references and respectfully submit that the recited

embodiments of the present invention are not rendered obvious over Gvili in view of Fowler, McClure et al., and Murphy.

Claim 1 of the present invention recites:

An integrated guidance system comprising:
a position determination system adapted for determining a current position;
a lightbar device adapted for providing a visual representation of a deviation of said current position from a desired path to guide movement along said desired path;
a data input device for scrolling, selecting, and editing operations, including configuring said position determining system with a menu;
a display device for displaying text, said menu and graphics;
a processor adapted for facilitating user interaction by integrating operation of said position determination system, said lightbar device, said data input device, and said display device; and
a housing enclosing said position determination system, said lightbar device, said data input device, said display device and said processor.

Claim 12 recites similar claim limitations as claimed in Claim 1. Claim 25 recites a method of interacting with the system recited in Claims 1 and 12.

The Office Action cites Gvili as showing an integrated guidance system comprising: a position determination system adapted for determining a current position, a lightbar device adapted for providing a visual representation of a deviation of current position from a desired path to guide movement along desired path, and a processor adapted for facilitating user interaction by integrating operation of position determination system, lightbar device, data input device, and display device (Office Action, page 2). Additionally, the Office Action cites the following on page 4:

...and it would have been obvious to one of ordinary skill in the art by incorporated system components into a single unit enclosing into a housing for interconnecting and regulating the signals of relating system components, and to avoid overcrowd of

obstacles such as too many cables connect in a space constraint of a cockpit vehicle. Furthermore, the less of an obstacle blocking any portion of a cockpit space, the quicker and closer a pilot will be able to acquire and maintain the desired course line across a desired path, therefore, the safer the mission can be conducted.

Applicants understand Gvili to purportedly teach a distended guidance system designed primarily for agricultural aerial pilots to facilitate maintaining a desired course line while spraying a targeted area. Gvili provides for a guidance system having a computer, with cables separately attaching the following components thereto: (1) a heads up display indicator containing lightbars, to be located on the aircraft's glare shield in the pilot's line of sight out the front of the aircraft (column 7, lines 38-40); (2) a control panel containing a map display indicator (column 7, lines 43-45); (3) antennas to be located external of the aircraft (column 7, lines 38-40); and (4) sensors, optional autopilot, and optional (column 7, lines 38-40).

As per Claim 1, Applicants respectfully submit that the Gvili reference fails to teach or suggest the following: (1) a position determination system adapted for determining current position; (2) a lightbar device adapted for providing a visual representation of a deviation of current position from a desired path to guide movement along desired path; (3) a processor adapted for facilitating user interaction by integrating operation of position determination system, a lightbar device, a data input device for scrolling, selecting, and editing operations, including configuring said position determining system with a menu, a display device for displaying text, said menu and graphics; and (4) a housing enclosing the aforementioned (1), (2), and (3) within this paragraph. In fact, Gvili fails to teach or suggest configuring the position determining system at all.

Furthermore, Applicants respectfully submit that Gvili teaches away from the present invention due to Gvili's components disclosed as being separately attached to a computer, and the very different purpose and use of Gvili's lightbar with light-emitting diodes representing flagmen.

Furthermore, by purportedly teaching a distended guidance system, primarily designed for aerial pilots spraying fields, Gvili teaches away from the claimed integrated guidance system enclosed within a housing.

Gvili also teaches away from the recited Claim limitations in showing (e.g. Figure 1) that lightbars 40 and 50, computer 70, which further comprises the guidance system, and the control panel 72 with the display 73 are separate components, to be distributed throughout the cockpit of the aircraft. Aircraft cockpits generally have its controls and displays extended throughout the space constrained cockpit, housing an array of cables connecting under panels various components, thereby not interfering with the pilot's operation of the aircraft.

Additionally, an aerial pilot spraying fields has many more operational factors to consider and instrumentalities to control than a driver of a tractor. To allow for greater accessibility to the instrumentalities, the aircraft's cockpit controls and displays must therefore be arranged in a much more distended manner than the arrangement of controls on agricultural equipment such as tractors.

Given the practical operational functionality of Gvili's distended guidance system, Gvili fails to teach or suggest disposing the components of a position determination system, lightbar device, data input device, display device, and processor in a single housing as recited in embodiments of the present invention.

Gvili also teaches away from the recited Claim limitations in showing an entirely different use and purpose for Gvili's lightbar with light-emitting diodes representing 'flagmen' in different positions as compared to Applicants' claims of light-emitting diode patterns representing a deviation from a desired path. Further, Gvili provides for the heads up display indicator and the map display indicator which dictate many visual prompts in the following forms: light-emitting bars on the heads up display indicator representing the position of computer simulated flagmen at the beginning and end of a selected lane to be traversed (column 5, lines 40-67), and alphanumeric messages such as text and/or coded numbers, a lane number, elapsed time, distance or time to go to the first or second point (column 7, lines 11-15) entered below the lightbars on the heads up display indicator (column 8, lines 44-46) and on the map display contained by the control panel (column 7, lines 55-56).

Inherent in Gvili is the necessity of the aircraft pilot to interpret the combination of light-emitting diodes simulating flagmen, information from the map display, and alphanumeric messages displayed upon both the heads up display and on the map display, in order to determine the aircraft's displacement from the pilot's desired course. Both Gvili and Applicants' Claims contain lights, but their immediate purpose and function as indicated by each's respective specification is very different.

Similarly, the Applicants respectfully submit that Gvili does not teach or suggest the recited Claim limitations recited in Claims 12 and 25 of the present invention. Gvili also teaches away from the Claim limitations recited in Claims 12 and 25 of the present invention.

Claim 1 is rejected under 35 U.S.C. §103(a) as being unpatentable over Gvili in view of Fowler. The Office Action cites Fowler as showing a display device for displaying graphics. (Office Action, page 3) Applicants understand Fowler to purportedly teach in column 4, lines 31-44 that the display shows a number indicating a distance from a desired swath, as well as arrows and dashed lines. However, Fowler fails to teach or suggest configuring the positioning system with a menu displayed on a display device, as claimed.

As explained above, Gvili teaches away from Applicants' claims. Specifically, Gvili teaches neither a housing enclosing a system, nor a lightbar device as claimed. However, even though Gvili discloses a map display component which may be capable of displaying alphanumeric text and graphics, said map display is disclosed as separate from Gvili's other guidance system components, which is very different from the claimed invention.

Further, in column 3, lines 50-52, Fowler teaches away from the recited Claim limitations by stating that the GPS receiver is external to the system.

Gvili, alone or in combination with Fowler does not anticipate or render obvious an internal position determination system adapted for determining a current position, a data input

device for configuring said position determining system with a menu, a processor adapted for facilitating user interaction by integrating operation of said position determination system and said display device, and a housing enclosing said position determination system, said display device, and said processor as is recited in Claim 1.

Applicant respectfully submits that the embodiments of the present invention as recited in Claim 1 are not rendered unpatentable over Gvili in view of Fowler. Similarly, Applicants respectfully submit that Gvili and Fowler do not teach or suggest the recited Claim limitations recited in Claims 12 and 25 of the present invention, and in fact, teach away from the claim limitations recited in Claims 12 and 25 of the present invention.

Claim 1 is rejected under 35 U.S.C. §103(a) as being unpatentable over Gvili in view of McClure. The Office Action cites McClure as showing a navigation guidance system to guide a vehicle to a desired path, and a housing enclosing position determination system, lightbar device, data input device, display device, and processor. Additionally, the components of the system may be incorporated into a single unit or maybe a separate module. (Office Action, page 3-4) Applicants understand McClure to teach a swathing guidance system including a controller storing data, a position detector subsystem, and a display indicator displaying rows of light-emitting diodes.

However, neither McClure nor Gvili teach a data input device for the combination of scrolling, selecting, and editing operations, including configuring said position determining system with a menu as recited in Claims 1, 12, and 25 of the present invention, and/or the

combination of a display device for displaying text, said menu for configuring said position determining system, and graphics as recited in Claims 1, 12, and 25 of the present invention.

As explained above, Gvili teaches away from Applicants' claims, as its components are disclosed as separate. Moreover, the combination of Gvili and McClure fails to teach or suggest this claim limitation because McClure does not overcome the shortcomings of Gvili. Applicants respectfully submit that the embodiments of the present invention as recited in Claim 1 is not rendered unpatentable over Gvili in view of McClure for the following rationale.

Claim 1 is rejected under 35 U.S.C. §103(a) as being unpatentable over Gvili in view of Murphy. The Office Action cites Murphy as showing a data input device for editing operations, including configuring position determining system with a menu, and display menu. (Office Action, page 3) Applicant understands Murphy to teach a graphical user interface subsystem for controlling among other things, a flight management subsystem for monitoring and controlling a GPS data module, an inertial navigation module, and a LIDAR module. (Column 17, lines 18-32) Murphy does not teach or suggest a position determination system, a lightbar device, a data input device, a display device for displaying a menu for configuring the position determining system and a processor which are enclosed in a housing as recited in Claim 1.

As explained above, Gvili teaches away from Applicants' claims. Moreover, the combination of Gvili and Murphy fails to teach or suggest this claim limitation because Murphy does not overcome the shortcomings of Gvili. Applicants respectfully submit that the embodiments of the present invention as recited in Claim 1 is not rendered unpatentable over

Gvili in view of Murphy. Similarly, the Applicants respectfully submit that Gvili and Murphy do not teach or suggest the recited Claim limitations recited in Claims 12 and 25 of the present invention.

The Applicants respectfully submit that the determination of obviousness cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the present invention. There must be a teaching or suggestion within the prior art to select particular elements, and to combine them in the way claimed. The Applicants respectfully submit that motivation for combining the aircraft navigation systems of Gvili and Murphy with the land-based vehicle guidance systems of Fowler and McClure is lacking except to selectively combine components to fit the parameters of the present invention. The Applicants further submit that there is no motivation for combining the apparatus' of Gvili, Fowler, McClure, and Murphy in the manner recited in Claims 1, 12, and 25 of the present invention as each of the cited references teaches a complete and functional method. Accordingly, the Applicants respectfully submit that the rejection of Claims 1, 12, and 25 under 35 U.S.C. § 103 (a) is overcome.

Claims 2-3, and 5-11 depend from Claim 1 and recite additional limitations descriptive of embodiments of the present invention. Accordingly, the Applicants respectfully submit that the rejection of Claims 2-3, and 5-11 under 35 U.S.C. § 103 (a) is overcome.

Claims 13-14, and 16-24 depend from Claim 12 and recite additional limitations descriptive of embodiments of the present invention. Accordingly, the Applicants respectfully submit that the rejection of Claims 13-14, and 16-24 under 35 U.S.C. §103(a) is overcome.

Claims 25-27 and 35

Claims 25-27 and 35 are rejected under 35 U.S.C. §103(a) as being unpatentable over Fowler in view of McClure and Murphy. The rejection is respectfully traversed for the following rational.

As stated above, Fowler does not teach or suggest a position determination system adapted for determining a current position, or a lightbar device adapted for providing a visual representation of a deviation of the current position from a desired path to guide movement along the desired path, which are disposed in housing that also encloses a data input device, a display device and a processor as recited in Claim 1 of the present invention. Instead, in column 3, lines 50-52, Fowler also teaches away from the recited Claim limitations which state that the GPS receiver is external to the system. Furthermore, Fowler teaches in column 4, lines 31-44 that the display shows a number indicating a distance from a desired swath, as well as arrows and dashed lines. Fowler fails to teach or suggest configuring the positioning system with a menu displayed on a display device, as claimed.

The Applicants respectfully submit that McClure does not overcome the shortcomings of Fowler. For example, McClure does not teach or suggest a data input device for scrolling,

selecting, and editing operations as recited in Claims 1, 12, and 25 of the present invention. Furthermore, McClure does not teach or suggest a display device for displaying text, the menu for position determining system configuration and graphics as recited in Claims 1, 12, and 25 of the present invention.

The Applicants respectfully submit that Murphy also fails to overcome the shortcomings of Fowler and McClure. For example, Murphy does not teach or suggest a position determination system, a lightbar device, a data input device, a display device for displaying a menu for configuring the position determining system and a processor which are enclosed in a housing as recited in Claim 1.

For this rational, Claims 25-27 and 35 are patentable over Fowler in view of McClure and Murphy and allowance of Claims 25-27 and 35 is earnestly solicited.

Claims 26-30, and 32-35

Claims 26-30, and 32-35 depend from Claim 25 and recite additional limitations descriptive of embodiments of the present invention. Accordingly, the Applicants respectfully submit that the rejection of Claims 26-30, and 32-35 under 35 U.S.C. § 103 (a) is overcome.

CONCLUSION

In light of the above remarks, the Applicants respectfully request reconsideration of the rejected Claims.


Based on the arguments presented above, the Applicants respectfully assert that Claims 1-3, 5-14, 16-30, and 32-35 overcome the rejections of record and, therefore, the Applicants respectfully solicit allowance of these Claims.

The Examiner is invited to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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